

Date and Local Mean Middle Time.		Place of Observation.	Time spent in Counting.	Number of Meteors Counted.	Horary Number.	State of the Atmosphere.
d	h		h m			
869, Nov.	9 13 ²	31° 4' N, 29° 6' E	0 36	10	17 +	Cloudy.
	9 14 ⁴	" "	0 30	13	26	Clear.
	9 15 ⁴	" "	0 25	11	26	"
	10 8 ¹	Alexandria	0 55	9	10 +	Cloud and ☾.
	10 13 ⁵	"	0 48	17	22 +	Cloudy.
	10 14 ⁵	"	0 36	18	30 +	"
	10 15 ⁵	"	0 42	14	20 +	"
	11 8 ⁴	"	0 15	6	24 +	Cloud and ☾.
	11 13 ⁴	"	0 48	14	17	Clear.
	11 14 ⁶	"	0 40	10	15	"
	12 14 ¹	"	1 9	28	25 +	Cloud.
	13 15 ⁵	Port Said	1 16	112*	—	Very cloudy.
	14 15 ⁰	"	0 54	5	5	Cloudy.
1870, Dec.	12 7 ⁹	Valetta	1 0	13	13 +	Clear.
	14 7 ²	"	2 0	7	4	"
	15 9 ²	"	1 12	6	5	"
	16 9 ²	"	2 12	7	3	"
	17 9 ⁰	"	3 0	6	2	"
1869,	23 13 ¹	"	0 38	15	19	☾ ☾ and cloud.
	27 11 ⁶	"	1 30	9	6 +	Very cloudy.

Some Observations of the Colours and Magnitudes of Southern Stars in the Year 1864. By Capt. G. L. Tupman, R.M.A.

When at Montevideo, in May and June 1864, I proposed to register the colours of all stars, visible to the naked eye, within 60° of the South Pole, and to make an attempt to compare their magnitudes with those obtained by the late Sir John Herschel, in 1836-8. I was, however, ordered home shortly after commencing, and only lately have thought the few observations made worth communicating, chiefly on account of the number of coloured stars observed.

The magnitudes have been obtained from observed sequences by plotting on charts of engraved squares, using Sir John's sequence magnitudes as ordinates, and drawing a free curve through all the points obtained, by which method the new magnitudes are strictly comparable with those formerly obtained.

In the Catalogue the Constellations are arranged alphabetically, and the stars in the order of lettering for convenience of reference. The letter and the B.A.C. number are considered sufficient for identification. The magnitudes given in the Cape "Results" are entered in the third column under 1837. Among the Notes are occasional observations with an achromatic of

* All very large meteors. See *Monthly Notices*, vol. xxx. p. 29.

9-inches aperture, by Fitz, of New York, then the property of W. G. Lettsom, Esq., Her Majesty's Consul-General at Montevideo, who most kindly allowed me the use of it.

The following abbreviations have been employed,—

v.	very	= α	{ Equal to α , brighter than β , less than γ (of the same constellation unless otherwise indicated).
bt.	bright	> β	
or.	orange	< γ	
lit.	little	n.	north
sm.	small	s.	south
D.	double	p.	preceding
m.	magnitude	f.	following

Colours and Magnitudes of Southern Stars, 1864, May and June.

Ara.

	B.A.C.	1837. Mag.	1864. Mag.	1864. No. of Obs.	Colour.	Notes.
α	5899	3.40	3.50	2	..	= ζ
β	5852	3.31	..	..	Deep bt. orange	> γ δ ζ
γ	5850	3.82	..	..	Bluish white	< ζ , > δ
δ	5877	..	..	..	Pale orange	< γ > η
ζ	5683	..	3.50	2	Bright orange	= α , between β and γ in Mag.
η	5607	..	..	..	Orange	< δ < γ

Argo.

α	2096	0.22	..	..	White	Brighter than Arcturus
β	3177	2.03	2.30	2	..	= ϵ = γ , > ι δ
γ	2755	2.08	2.15	3	..	lit. > ι = ϵ β
δ	2979	2.42	2.45	5	..	= ι λ , lit. < γ , lit. > κ
ϵ	2832	..	2.25	5	Yellow; orange	= β γ
ζ	2710	2.72	2.77	3	..	= κ , nearly = ν Scorp.
η	3695	..	5.41	8	Orange	
θ_2	3686	3.26	3.26	4	..	= α Musc. = δ Cruc. Has brilliant loose cluster about it
ι	3186	2.80	2.71	5	White	= δ λ , lit. > κ , v. lit. < γ
κ	3213	2.94	2.95	4	..	= ζ , nearly = ν Scorp. < ι δ Arg.
λ	3126	2.46	2.43	3	Orange	= ι δ
μ	3702	3.08	3.02	5	Very red	
ν	2188	3.74	3.69	3	..	> δ Cruc. > α Musc. > θ Arg.
ξ	2602	3.74	..	..	Yellow	Three or four stars <i>sp.</i> largest of which is white
\omicron	2950	3.99	4.18	2	White	A cluster

	B.A.C.	1837. Mag.	Mag.	1864. No. of Obs.	Colour.	Notes.
π	2414	2.98	..	..	Very rich yellow	Two stars nf both white; 9 or 10 sm. stars in field
ϵ	2728	3.32	..	..	Yellow	
σ	2482	3.79	..	..	Yellow	
τ	2256	3.50	..	..	Light yellow	$> \sigma$
ν	3565	3.53	3.40	2	White?	= or lit. $> \omega$
ϕ	3410	4.33	4.22	2		
χ	2665	4.03	4.27	1	..	= a Carinæ, $< N$ Car.
ω	3516	3.72	3.8	1	White	= or $< \nu$

Carina Argûs.

a	3149	4.35	4.27	3	White	= χ Arg. $> c i g$ Car. $< N$ Car.
b_1	3073	..	4.7?	1	"	} $b_1 = b_2 < f$ Car.
b_2	3089	..	4.7?	1	"	
c	3064	..	4.40	2	"	= i , $< a$, $> u$
e_1	2921	..	4.4?	1	"	} $e_1 = e_2 = f h l$
e_2	2920	..	4.4?	1	"	
f	2998	..	4.4	1	"	= $h l$
g	3179	..	4.6?	1	Deep orange red	= m , $< a$. In the 9-inch this star is a very rich yellow
h	3289	..	4.4	1	White	= $f l$
i	3152	..	4.35	2	..	= $c = o$ Arg.
l	3353	4.38	4.36	2	Yellow; orange	= $a f h < o$ Arg.
m	3320	..	4.6?	1	White	= $g < h l$
p	3619	3.90	3.88	3	"?	= q , lit. $< q$
q	3526	3.85	3.93	3	Orange red	= p
r	3635	..	4.94	7	Orange red	
s	3594	..	4.27	7	Yellow; orange	$< u$, $> X$ Vel.
t_1	3462	..	5.98	7		
t_2	3655	..	5.23	7	Deep or. red	Bris. 3127, cluster 6 mag.
u	3740	4.51	4.19	7	Bt. or. red	$> s$, $< c$
x	3818	4.83	4.27	3	Deep or. red	
N	3269	3.69	3.60	4	Yellow; orange	$> a$, $> \nu$ Arg. $> \chi$ Arg. In the 9-inch a very rich yellow
P. Vel.	3589	..	5.50	6	White	Variable?
T "	3546	..	5.1	1	"	
V "	3536	..	5.50	2	Red	
X "	3658	..	4.41	7	Yellow?	$< s$; Bris. 3135 double.
Z "	3705	..	5.94	7	White	Variable; 6.5 in 1872
—	3680	..	6.33	5	..	Brisbane red

	B.A.C.	1837. Mag.	1864. Mag.	No. of Obs.	Colour.	Notes.
—	3688	..	5.29	7	Deep or. red	„ red
*Pup.	2530	..	..	..	Yellow?	A coarse double star, com- ponents and alike
11 „	2652	..	..	..	Light yellow	
72 „	2827	..	..	..	Orange	
—	3624	..	..	..	Deep orange	= K Car.

Canis Major.

δ	2345	2.32	..	..	Fine yellow	
η	2458	2.85	..	..	Purple?	Not white
ι	2274	..	..	..	Light yellow	Small star <i>f</i> which is very red
λ	2066	4.16	..	..	Rich or. yellow	
ο ₁	2267	4.36	..	..	Intense yellow	Small star <i>np</i> quite red; two small stars in field which are white. Fine object
ο ₂	2318	3.75	..	..	Rich yellow	Small star <i>np</i> deep orange; near four or five others which are white
π ₂	2269	..	..	..	Dull yellow	
σ	2309	3.92	..	..	Rich or. yellow	
τ ₇	2388	..	..	..	White	Small star <i>s</i> full orange

Centaurus.

α	4832	0.34	..	..	Rich yellow	= Arcturus, or brighter
β	4669	1.14	1.20	3	White	= α Cruc. = Ant., > Spica.
γ	4264	2.68	2.70	4	„	= ι Scorp. scarcely < θ Cent. < γ Cruc. Just divided with 220 in 9-inch
δ	4087	2.99	3.07	2	White	= η ζ, scarcely less ε
ε	4549	2.82	2.89	4	„	Exactly = α Lupi
ζ	4638	2.96	3.00	4	„	= or > η δ scarcely < ε
η	4811	2.91	2.89	4	„	= δ ζ, nearly = ε
θ	4626	2.54	2.57	2	Pale orange?	v. lit. < λ Scorp.
ι	4458	3.20	3.2	1	White	lit. > π ζ Lupi
κ	4928	3.60	3.42	3	„	= π Scorp.
λ	3941	3.70	3.6	1	„	= q Car. = β Musc. Be- tween this star and B.A.C. 3986 is a fine curve of 6 m stars, one of which is the cluster <i>h</i> . 3352

	B.A.C.	1837. Mag.	1864. Mag.	No. of Obs.	Colour.	Notes.
α	4602	3.93	3.66	3	White	
β	4601	3.95	3.95	2	"	= ϵ Lupi, nearly = δ Lupi
γ	4654	4.60	4.38	2	"	= ι Lupi
δ	4103	4.63	4.6	1	"	
ϵ	4653	4.54	4.5	1	"	
ζ	4000	..	..	..	"	= η ζ Cruc.

Crux.

α	4187	1.2	1.20	3	White	= β Cent. > Spica, > Antares
β	4289	1.6	1.51	4	"	= Spica, Antares
γ	4215	1.73	1.69	4	Orange	Nearly = β . Have sometimes thought it > β
δ	4120	3.57	3.35	2	White	= α Musc. = θ Arg.
ϵ	4158	4.61	4.3?	1	Orange	> σ Cruc. < λ Cent.
ζ	4133	4.71	..	..	White	= η θ , B.A.C. 4000
η	4078	4.60	..	..	"?	= ζ
θ	4327	4.61	..	..	"	= ϵ , h. calls it σ Crucis
θ_1	4061	..	..	..	"	= η ζ

Lupus.

α	4839	2.82	2.87	3	..	= ϵ Cent.
β	4924	3.14	3.11	4	..	Nearly = ζ δ η ϵ Cent.
γ	5118	3.36	3.35	3	White	
δ	5046	3.94	3.95	2	"	
ϵ	5056	4.00	3.95	1	"	= ν Cent.
ζ	4987	4.11	4.4	1	"	= α , < ν_1 Cent.
ι	4734	4.16	4.3	1	"	= ν_1 Cent.
κ	4986	4.32	4.4	1	"	= ζ

Musca.

α	4245	3.43	3.42	2	White	= δ Cruc. = θ Arg.
β	4280	3.67	3.50	2	"	= exactly λ Cent.
γ	4224	4.67	4.8?	1	..	< δ , < B.A.C. 3984
δ	4353	4.60	..	..	Yellow	= B.A.C. 3984, < β , > γ
	4129	..	..	..	Orange red	Two stars 6 m make right angle at ϵ , both white
	3984	..	4.6:	1	White	= δ
	3993	..	..	..	Red	

Scorpio.

1873MNRAS

	B.A.C.	1837. Mag.	Mag.	1864. No. of Obs.	Colour.	Notes.
α	5498	1.28	1.2	1	Orange	Companion easy with 3-in. aperture
γ	6018	3.98	..	..	White	= γ_1
ε	5632	2.71	..	..	Orange; yellow	= ε
θ	5395	2.29	2.3	1	White	= λ
ι_1	6004	3.53	..	..	..	= γ Cent. D star f 5'; 11, 13; 2"
κ	5970	2.91	..	..	..	= ε , $> \nu$
λ	5915	1.87	2.05	1	..	= θ , nearly = θ Cent.
$\mu+2$	5638	$\left\{ \begin{array}{l} \mu_1 \text{ 3.67} \\ \mu_2 \text{ 4.16} \end{array} \right\}$	3.60	1	..	$\mu_1 = \mu_2$!
ν	5382	3.42	3.0	1	..	h. has another value. 4.58
π	5289	3.35	3.65	1	..	= κ Cent.
σ	5447	3.50	3.5	1	..	= $\beta \gamma$ Triang. Aus.
τ	5539	3.44	3.5	1	..	= σ

Triangulum Aust.

α	5578	2.23	2.2	1	Orange; yellow	2.7 rejected
β	5233	3.46	3.57	3	White	
γ	6255	3.51	3.60	2	..	
ε	5103	..	..	..	Orange	
<i>Spica</i>		1.41	1.2	1	White	= β Centauri
α <i>Circini</i>		3.78	3.9	1		
α <i>Pictoris</i>		3.77	3.7	1		

On the supposed Re-discovery of Biela's Comet. (No. 2.)
By Captain Tupman.

The letter of Professor Klinkerfues in the last number of the *Monthly Notices*, combined with the now well-known singular circumstances attending Mr. Pogson's observations, naturally leads all those who have not gone into the matter geometrically into the belief that the long-lost Comet of Biela has been really seen again.

The lines of sight, or "directions of observation," on December 2 and 3, pass at such a distance to the north of the known orbit of Biela's Comet that accurate heliocentric co-ordinates of the comet's position in space cannot thereby be obtained.

As much depends upon the actual orbit in which the meteors of November 27 were moving, I have computed the elements from the observed position of the radiant point on the assumption of a

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